

SIMPSON ROAD OVER STACKPOLE CREEK A DESIGN-BUILD BRIDGE PROJECT

Prepared for CITY OF SACO, ME DEPARTMENT OF PUBLIC WORKS 300 Main Street Saco, ME 04072

Bid Proposal

Prepared by: Chesterfield Associates, Inc. 123 West Shore Rd Westport Island, ME 04578

March 23, 2015



March 23, 2015

City of Saco 300 Main Street Saco, Maine 04072

Subject:

Request for Proposals

Simpson Road over Stackpole Creek - A Design-Build Bridge Project,

Saco, Maine

To Whom it May Concern:

Chesterfied Associates is pleased to present our response to you request for proposal for the Stackpole Creek Bridge. Our proposal is a hybrid replacement/restoration scheme. We are excited about the possibility to making this proposal a reality for the City of Saco and creating a win-win solution combining the longevity and functionality objectives of the City and the historical and aesthetic objectives of both the City and the surrounding neighborhood.

We are confident that our proposal will be attractive and offer a unique solution for your collective consideration. We look forward to answering your questions and further discussing this much-loved bridge.

Sincerely, Chesterfield Associates, Inc.

Davies Allan, President

Copy: File

FORM A – TECHNICAL PROPOSAL SUBMISSION FORM Simpson Road over Stackpole Creek

CHESTERFIELD ASSOCIATES, INC. (Name of Proposer)

The above Proposer hereby submits its Technical Proposal, consisting of the following items:
(Instructions: Specifically list all items submitted with the Technical Proposal including
number of grawings, number of narrative pages, etc. Attach or incorporate additional pages
as necessary. Refer to the Project Requirements for additional instructions regarding Technical
Proposal submission.)
SEE ATTACHED
By signing below, the above Proposer hereby certifies states that to the best of the
Proposer's knowledge and belief:
1. The Proposer has received and considered complete copies of Amendments numbered
<u>1</u> through Z.
2. The Design-Builder, Designer, other Major Participants and key personnel indicated by the
Proposer in its Statement of Qualifications will be used on this Project in the same manner and to the same extent as so indicated.
3. All of the statements, representations, covenants and/or eertifications statements of
belief set forth in the Proposal are complete and accurate as of the date hereof.
4. All representations and/or certifications statements of helief required of the
Proposer by the RFP and
Contract are complete and accurate.
5. This Technical Proposal is responsive.
6. The person signing below is legally authorized to do so.
[Any exceptions to the above cartifications atotomoute of hell- 6
[Any exceptions to the above certifications statements of belief must be explained in detail on pages attached hereto. Number of pages attached, if any: <u>see attached</u> .]
.]
PROPOSER //
3/23/15
By: 5. Davies allah proj. [Name and Title Printed]
Name and Title Printed
frame and the thiced

Technical Proposal

Team Description

Chesterfield Associates is a construction firm specializing in bridge and marine construction, located in Westport Island, Maine. A few years after the inception of Chesterfield Associates, Inc we began taking on projects for the Coast Guard, performing structural repairs on Lighthouses. Oft times an upgrade would include the installation of a 90' Loran antennae, requiring substantial concrete and stone work to provide a suitable foundation that would readily resist the overturning forces associated with the design.

Later, the Coast Guard implemented the installation of solar technology, and Chesterfield aptly participated. Over the years Chesterfield has worked on approximately 30 lighthouses.

In 1986 the National Park Service awarded Chesterfield a two million dollar contract to rebuild the Delaware Roebling Aqueduct. The project involved innovative construction techniques which resulted in two engineering awards. (see attached Wikipedia article)

In 1987 the State of New Hampshire entered into a design build contract with Chesterfield to rebuild the Cornish Windsor covered bridge – the longest two span covered bridge in the country - over the Connecticut River. The entire bridge was lifted four feet to allow for the rebuilding of both stone abutments and center pier. The work was completed in 1988 at a total cost of \$4.5 million dollars.

The Cornish Windsor Bridge project resulted in Chesterfield being given numerous engineering awards. (see attached magazine & article).

In 1991 the State of Maine awarded Chesterfield a \$750,000 contract to build a new covered bridge in Dover-Foxcroft. The project involved increasing the height of the granite abutments 4'. The novel part of the construction was the building of the structure a mile off site, and transporting it down a state highway to the final location. (see attached magazine & article).

The rebuilding of the Stackpole Stone Bridge is yet another task that requires innovative strategy and sound construction technique. By teaming up with Mark Gray, P. E., Chesterfield has brought on board a person that eschews this style of ingenuity, resulting in a structure that will absolutely respect its heritage, yet conform with the demands of current traffic parameters. Chris Tanguay, of Maine Dry Stone, complements the team with his broad knowledge of stone structure construction and extensive experience. JAMM Civil and Structural Engineering is a consulting engineering firm with offices in Freeport, Maine. JAMM has been in business for 19 years and has experience with a broad array of engineering projects, including bridges, small dams, road design, and buildings especially as they apply to the disciplines of civil and structural engineering. JAMM has experience with hydraulics, hydrology, bridge design, project construction document preparation and project management.

Chris Tanguay, based in Maine, was certified as a Master Craftsman (Certification No. 163) through the Dry Stone Walling Association of Great Britain in 2005 and completed his Examiner's Certification through the organization in 2006. In 2010 Chris became certified as a Master Craftsman (one of three in the country) through the Dry Stone Conservancy located in Kentucky. Chris has been working with stone for 20 years. His work with stone started as a hobby, but turned into a career after he attended a lecture in college on the art of dry laid stonewalls. When Chris is not working with stone he enjoys promoting the craft through workshops and demonstrations for non-profits in the New England area.

JAMM Civil & Structural Engineering was established in 1996. Practice areas include bridges, structural engineering and design, civil engineering and design, roadway design, small dams and hydraulic/hyrology. Mark Gray, PE, President has been practicing engineering in southern Maine for 40 years.

Project Team

Construction project manager: Davies Allan, President, Chesterfield Associates

Design Engineer:

Mark Gray, P.E. (Maine 3997) (see attached resume)

Stone Mason:

Chris Tanguay

Scope of Services

Chesterfield Associates proposes to provide the following design and construction services.

- 1. Final design and construction plans and specification notes describing the improvements to the bridge and approaches.
- 2. Complete construction services including:
 - a. Removal of loose mortar in existing stone wall faces.
 - b. Stabilizing and securing stone elements in the wall, especially in the areas within and near the entrance and exit of the existing culvert opening.
 - c. Chinking larger openings in the dry-laid stone masonry.
 - d. Removal as practicable frost-susceptible fill materials from within the area bounded by the culvert walls, stone side wall and top surface of roadway. Existing culvert walls and stone arch roof will be supported as required.
 - e. Reinforce the sides and top of the existing stone culvert passing through the dry-laid stone side walls with reinforced concrete walls and roof cast against the exposed inside faces of the culvert walls and top arch. Soil forms will be used on the vertical walls. Bottom of the walls will be dowelled into existing ledge and large side wall stones.

5 5 325 Fr

- f. Backfill the same zone with crushed rock and stone graded from course to fine, deep to shallow, ending with an uncompacted crushed stone work platform and form for a reinforced concrete bridge slab spanning between the tops of the existing dry-laid stone side walls.
- g. Construct reinforced concrete abutment walls on both ends of the bridge supported on spread footings on native soil (or ledge if encountered in the excavation).
- h. Construction reinforced concrete structural slab spanning between the two existing dry-laid stone side walls, anchored into the top of the stone wall. Provision will be made to allow the forming materials supporting the slab during construction to settle or degrade over time to allow the slab to act as designed.
- i. Paved, full depth, approach aprons will be constructed to transition the approach vertical and horizontal alignments to the new bridge deck. Limited clearing and installation of rip-rap around abutments on the four corners of the bridge.
- j. Guard rail will be provided on both sides of the new bridge deck and both sides of the approach aprons.
- k. Construction testing for concrete and soil materials will be undertaken

Design Narrative

There are four primary design objectives as listed below.

- 1. Bridge to accommodate H-20 vehicle loading
- 2. Bridge will provide 2 11' travel lanes.
- 3. Bridge will provide improved hydrology through the structure.
- 4. Bridge design will provide a 75 year design life.

H-20 Loading

The proposed design provides H-20 live loading.

Travel Lane Width

34

The proposed design is a hybrid between a replacement and rehabilitation. We have therefore provided two 12' travel lanes, two 3' wide shoulders and additional width of 2' on each side to accommodate the mounting of deck supported guard rail.

Improved Hydraulic Capacity Through Structure

The proposed design will provide improved hydrology through the structure. The improvement will be provided by the removal of the temporary bracing that has been in place since 2001. Analysis of the hydraulic opening using the Q100 data provided by CLD using HydroCAD hydraulic and hydrologic modelling was undertaken with the following results. It should be noted that the project datum is lower than the NAVD88 datum used by FEMA and the Maine GIS library. Based on comparing contours, we believe that the difference is about 1.5 feet; project benchmark is about 1.5 feet lower than FEMA Flood Mapping. For purposes of clarity, we will use the FEMA datum in the following information.

The existing low point in the roadway pavement (overtopping elevation) is about elevation	0.08
Underside of top of arch in culvert	74.0
Spring line of arch (bottom of the arch where the culvert is 8' wide)	70.0
Bottom of 8' width if culvert	55.0
Calculated cross sectional area of the culvert	145 sf

The 100 year storm rains 6.6 inches in 24 hours type III storm Watershed area is 5.1 square miles or 3264 acres

Case	Q100 cfs	Cn	Tc (minutes) Elevation	Assumed Tailwater Elevation	Headpool Elevation	Comments
1	750	57	416.5	64	67.11	Saco River not at Peak
2	750	57	416.5	70	71.49	Saco River at 100 Year Flood Level
3	940	62	416.5	70	72.21	Saco River at 100 Year Flood Level - significant watershed development curve number +5
4	1136	67	416.5	70	73.05	Saco River at 100 Year Flood Level Significant Development Watershed curve number +10

The site is immediately adjacent to the Saco River at the bottom of the Saco River's watershed. Stackpole Creek has a much smaller watershed than the Saco River. For a design storm such as a hurricane which will cover a large enough geographic area to affect both watersheds, the peak discharge in Stackpole Creek will have come and gone before the Saco River peaks to the FEMA 100 Year flood elevation of 70.0. Nevertheless cases 2, 3 and 4 in the above chart show the headpool elevations for the case when Stackpole Creek peaks concurrently with the Saco River, an extremely unlikely event, given the once-every-100 year statistical frequency of the 100 year storm for both watersheds. This case considers a separate 100 year storm affecting the Stackpole Creek watershed concurrent with the peaking of the Saco River from a previous, more regional 100 year storm.

Cases 3 and 4 consider the question of upstream development in the Stackpole Creek watershed.

Alternate 3 considers an increase in curve number of 5 and case 4 considers the significant increase in curve number of 10 representing significant increases in peak discharge over time. Detailed analysis of development potential in the Stackpole Creek watershed was not undertaken. However, given the large amount of wooded, undevelopable land in this watershed these cure number increases seem reasonable.

See the attached sketch which graphically shows the headpool elevation of each case along with the upstream flooded area. Also shown is the flooded area which will occur from the Saco River backwater with no storm flow in Stackpole Creek. As can be seen, flooding risk is manageable. Recent anecdotal evidence from neighbors indicate that headpool elevations have been on the order of 76.5 during the

recent Patriots Day storm, likely because of of hydraulic inefficiency through the culvert due to the presence of the current bracing and its magnified tendency to collect water-borne debris which further impedes the hydraulic efficiency of the existing culvert.

We believe that after our proposed restoration and with regular maintenance of the upstream culvert entrance, that hydraulic capacity of the restored culvert will be adequate over the design life of the bridge and culvert. We have provided a graded rip-rap access corridor to allow a small excavator to move down the 2 on 1 slope to access the inlet side of the culvert to remove debris on a periodic basis. The existing 8' wide culvert opening will pass much debris, especially after the temporary bracing is removed.

Design life of the dry-laid stone retaining walls will be 75 years. The current localized movement of areas of the outside and culvert walls is due to freeze-thaw movement of the retained soils due to contamination over the life of the structure with frost susceptible soils. As others have said, live load surcharge forces may have contributed to movement of both culvert side wall and the more massive side walls. Trapped hydraulic pressure from retained headpool elevations may have also contributed to forces causing movement.

This proposal reduces or eliminates all three causes. We propose to remove the retained soils and replace them with free-draining crushed rock. We also propose to remove mortar facing on the lower sections of the wall to facilitate rapid drainage of water from within the structure without loss of finer material due to sediment transport. In addition, surcharge live loads from traffic will be transferred to the outside dry-laid stone retaining structures, eliminating destabilizing later loading to both the culvert and outside walls and replacing it with stabilizing vertical forces on the tops of the side walls. The proposed doweling into the top of the dry-laid stone walls will tie the whole system together with a very stiff horizontal diaphragm with a 1 to 3.3 aspect ratio. The result will allow the entire system to be analyzed for stability as an integrated system. Proposed reinforcing with a soil-formed reinforcing wall on the back sides and top of the existing culvert will stabilize and reinforce that structure.

Concrete deck system is preliminarily sized at 24" thick. The wearing surface will be concrete. As future paving of Simpson Road occurs, the bituminous paving can be extended over the bridge. The concrete deck system will be treated with a sealant to help prevent the intrusion of road salts. We also propose to use epoxy coated steel reinforcing which will extend the design life of the concrete slab system.

energe fact

7-32,357 E. G.

Proposal Conditions

.....

Section 1.7 of the RFP contains language that we and our insurers have concern about. Prior to entering into a contract with the City of Saco to design and construct this project, this language will need to be negotiated to our mutual satisfaction.

Professional liability coverage of \$1,000,000 per project, as required by the State of Maine, Bureau of General Services will be provided. Coverage is claims-made and is not "project-specific". Our proposal includes a \$2500 increase to change coverage from \$1,000,000 to \$2,000,000 per project. This seems to be an unnecessary cost to the taxpayers of the City of Saco and will be credited if this provision is relaxed.

Section 5.2 Acknowledgement by the Proposer has statements that we would modify. Paragaph A states that all Owner-supplied information is conceptual in nature. Much of the supplied information consists of engineering evaluations, geotechnical evaluations, engineering opinions and recommendations, topographic and boundary surveys. We have relied on much of this information in the preparation and preliminary design of our proposal.

We assume that each party to an eventual agreement retains their own liability with respect to their obligations and responsibilities under the final contract.

Section 6.0 Project Design We propose to work closely with the City of Saco's Engineering Department and any third-party reviewers to come to a mutually acceptable design approach using prevailing engineering standards reasonable and customary.

In the absence of a defined pavement build-up and ditch design, our assumptions are shown on the attached plans. In the event that more costly designs are required, then appropriate changes in the contract terms will be required.

It is noted that the steel-backed timber guardrail specified is an expensive choice with little improvement in aesthetic appeal from the outside. We have carried the cost of this project requirement. The City may wish to revisit this requirement with resulting savings to the taxpayers.

Design life assumes that a particular design will cease to function or be seriously degraded after the timespan has elapsed. Factors such as maintenance frequency, material degradation, rate of application of salts all have a marked effect on the condition and functionality of infrastructure over time. We believe that our proposal will provide a service life of 75 years with reasonable maintenance and care and meets established standards of design and engineering practice and practicable construction practices and capabilities.

Engineering "certification" language is uninsurable and overstates the responsibility of the engineer. We propose to provide sealed design and construction design documents along with any statements of our belief based on evidence at our disposal.

MARK GRAY JAMM

Civil and Structural Engineering 20 Independence Drive Suite 3a Preeport, ME 04032

REGISTRATION

, , , , ,

Professional Engineer: Maine (1979), New Hampshire 1988 (lapsed), Massachusetts (1988), Rhode Island 1989 (lapsed)

EDUCATION

B. S. Civil Engineering, University of Maine, 1975
All course work for M. S. Structural Engineering, University of New Hampshire, 1980

PROFESSIONAL BACKGROUND

Owner, JAMM, Civil and Structural Engineering, Freeport, Maine January 1996 to Present

General practice of Civil & Structural Engineering including design of structures, site design and civil design.

Vice President, BH2M, Gorham, Maine January 1989 to January 1996

Responsibilities include drainage studies, phosphorus studies, hydraulics, civil design, oversight of all structural engineering activities as well as specifications writing, coastal development, bridge design and support structural design for buildings.

Chief Structural Engineer, Wright-Pierce Engineers, Topsham, Maine October 1987 to January 1989

Responsibilities included quality assurance for all structural engineering, design of hydraulic structures, foundations, bridges, buildings and analysis of structures.

Project Engineer, T. Y. Lin International/Hunter-Ballew Associates, Falmouth, Maine 1975 to 1979; 1984 to 1987

Duties included design of treatment plant structures, bridges, buildings, marine structures, fishways, dam rehabilitation, backflow prevention systems, storm and sanitary sewer systems, urban street and highway design, site design, airport design and general civil design work.

Design Engineer, E. C. Jordan Co., Portland, Maine 1980 to 1981

Structural design of heavy industrial structures.

Engineering Manager, Hussey Seating Co., North Berwick, Maine 1981 to 1984

Duties included management of 25 person production drafting and engineering group along with service structural design in aluminum, steel and wood.

Design Engineer, Hunter-Ballew Associates, Portland, Maine 1975 to 1980

THE WHITE HOUSE WASHINGTON

November 9, 1988

It is a great pleasure to congratulate every recipient of the 1988 Presidential Awards for Design Excellence.

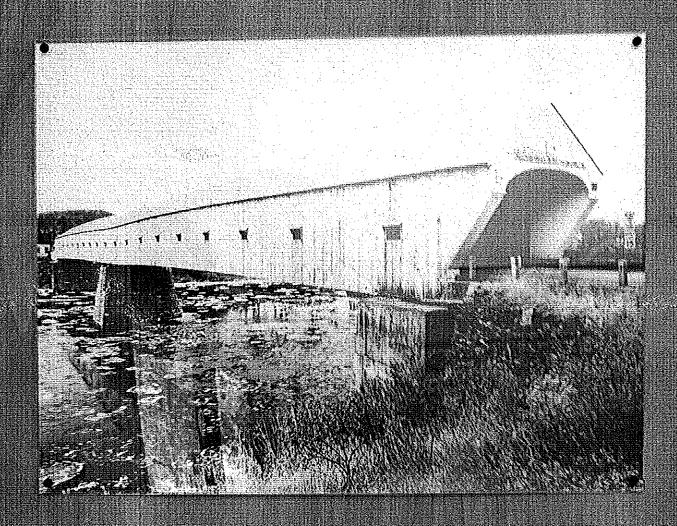
We do well to honor and recognize meritorious examples of Federal design such as yours, because government's success depends on its performance and ability to inspire. Good design reveals our values and the importance we place on these projects, and your example will surely encourage others to emulate them.

In the fields of architecture, interior and industrial design, landscape architecture and environmental planning, and visual communications, the Federal government currently is the largest single user of design services. The public trust requires that we use our resources prudently and well, striving for fine design that combines cost-effectiveness with problem-solving and beauty.

Each of the 10 winning projects in this year's Presidential Design Awards is a model of leadership in these areas. I am happy to commend the devotion of each designer and the foresight of the Federal departments and agency administrators involved. You have set a positive example for both government and the private sector, and the American people are proud and grateful.

God bless you, and God bless America.

Dans Cargu



AWARD OF MERIT

Rehabilitation of an Existing Bridge RESTORATION OF THE CORNISH WINDSOR GOVERED BRIDGE

Cornish, New Hampshire: Windsor, Vermont

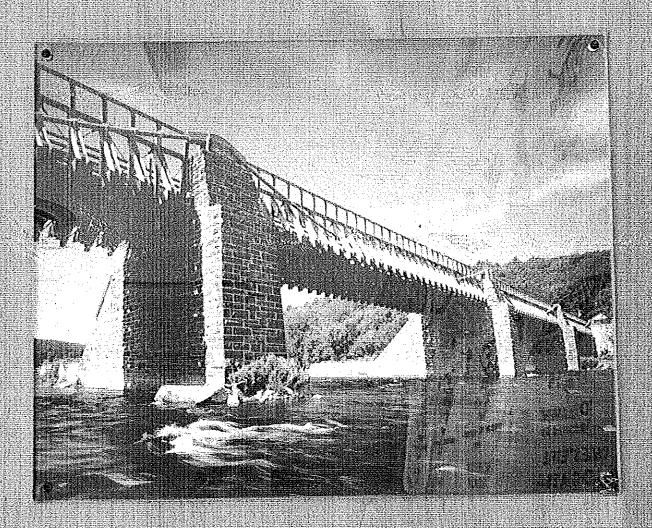
Owner: New Hampshire

Department of Transportation

Designer: DCF Engineering Inc.

Contractor: Chesterfield Associates

1990 ENGINEERED. I IMBEK BRIDGE AWARD



AWARD OF MERIT

Rehabilitation of an Existing Bridge

RESTORATION OF THE ROEBLING BRIDGE-

Packawakén, LPAS Minisink Ford, N. Y.

Öwner: Lational Raik-Service, Upper Delaware

Assemica and Regreational River

inesignment was winder. Consulting Engineers

Bevor Binder Belle, Architects & Planners

Contractors Chestorion Associates

Coordinates: 41°28'57"N 74°59'04"W

Roebling's Delaware Aqueduct

From Wikipedia, the free encyclopedia

Roebling's Delaware Aqueduct, also known as the Roebling Bridge, is the oldest existing wire suspension bridge in the United States. [1] It runs 535 feet (175 meters) over the Delaware River, from Minisink Ford, New York, to Lackawaxen, Pennsylvania. Opened in 1849 as an aqueduct connecting two parts of the Delaware & Hudson Canal (D&H), it has since been converted to carry automotive traffic and pedestrians.

Contents

- **■** 1 Construction
- 2 Post-construction history
- 3 Gallery
- 4 See also
- 5 References
- **■** 6 External links

Construction

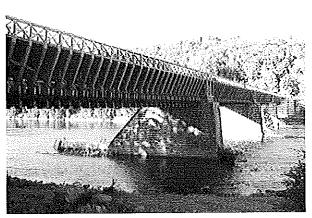
The bridge was begun in 1847 as one of four suspension aqueducts on the D&H Canal, a system of transportation connecting the coal fields of northeastern Pennsylvania with markets on the Hudson River. The canal opened in 1828, was enlarged after the 1840s, and closed in 1898.

Russell F. Lord and John A. Roebling designed the bridge and supervised its construction. Roebling would design the Brooklyn Bridge 20 years later.

Two important local industries with conflicting needs brought about construction of Roebling's Delaware and Lackawaxen Aqueducts: canal traffic

and timber rafting. Since the mid-18th century, timber from the Delaware valley had been floated down the river to shipyards and industries in Trenton and Philadelphia. The D&H Canal's rope ferry crossing

Roebling's Delaware Aqueduct



The restored bridge, in 2011

Other name Roebling Bridge

(s)

Carries Motor vehicles, pedestrians

Crosses Delaware River

Locale Minisink Ford, New York to

Lackawaxen, Pennsylvania

Maintained National Park Service

by

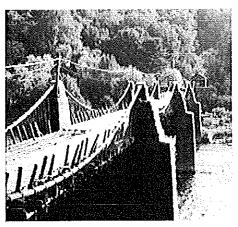
Design Suspension bridge

Total length 535 feet (175 m)

Opened 1849

Coordinates





The bridge before restoration. The suspension cables are hidden in the restored aqueduct by the canal sides

of the Delaware at Lackawaxen created a bottleneck, and there were numerous collisions with timber rafts headed downstream. In 1846, to alleviate both problems, the D&H Canal Company approved Russell F. Lord's plan to substitute two new aqueducts in place of the rope ferry. [2]

After evaluating several options, Lord recommended designs submitted by John A. Roebling, who had already built a wire suspension aqueduct at Pittsburgh in 1845.^[3] To raise the canal enough to allow the passage of ice floes and river traffic, Lord's plan called for three locks to be built on the eastern side.^[4]

An immediate success, the Delaware Aqueduct — which cost \$41,750 – and the Lackawaxen Aqueduct — which cost \$18,650, and of which only the abutments remain – reduced canal travel time by one full day, saving thousands of dollars

annually.[5]

Post-construction history

After the canal closed in 1898, the aqueduct was drained and converted into a vehicular bridge. Eventually, the canal sides and towpaths (walkways for those pulling barges) were removed. It operated as a toll bridge for wagons and, later, motor vehicles until 1979.

Portions of the D&H Canal, including the Delaware Aqueduct, were designated a National Historic Landmark in 1968. The Delaware Aqueduct is also designated a National Civil Engineering Landmark.

The National Park Service bought the bridge in 1980. The agency rebuilt the bridge's superstructure from Roebling's original plans and specification in 1986, and in 1995, the wooden icebreakers, towpaths and aqueduct walls were reconstructed, restoring the bridge's original appearance as an aqueduct. The bridge is now part of the Upper Delaware Scenic and Recreational River. [6]

* Both projects performed by Chesterfield associates, Inc.

FORM B - PROPOSAL GUARANTEE FORM

KNOW ALL M CHESTERFIELD ASSO	MEN BY	THESE	PRESENTS	THAT
of the 123 WEST SHORE RO		WESTPORT ISL	AND and	State of
MAINE	as Princip	al, and Surety,	a corporation duly	organized
under the laws of the Sta	te of <u>ILLINOIS</u>	a	nd having a usual	l place of
business in <u>PEORIA, ILLINC</u> unto the City of Saco in the				
and Surety bind themselves				
jointly and severally.	, then here, ence	ioio, administr	1016, 61100033013 tu	ia assigno,
The condition of this obligation	ation is such that i	f the Principal	has submitted to f	he City of
Saco, hereafter Owner, a cer		•		•
to enter into a written contr				
Creek and if the Owner s				
deliver a contract in the for				
proposal) and shall furnish		•		
payment of all persons performance				
shall in all other respects pe then this obligation shall be				
-		-		
Signed and sealed this1	otn day	OI WARCH	, 2015	
WITNESS:	PRINCIJ	AL: CHESTER	FIELD ASSOCIATES.	INC.
When (Coran		DIMO		
				
	_ Ву:			
WITNESS: 0	SURETY	(: RL) IMSORAN	CE COMPANY	
Peniu Racco	. By:		4	
PENNY ROCCO			N, ATTORNEY-IN-FAC	T
	Name of	Local Agency		·
		·····		_
WITNESS:	PRINCII	PAL:		
	By:			
	Ву:			
	Ву:			
WITNESS:	SURETY	<i>7.</i>		
	By:			
	Name of	Local Agency		

ACKNOWLEDGMENT OF CONTRACTOR/PRINCIPAL IF A CORPORATION

STATE OF) SS.: COUNTY OF)
On the 23 day of March in the year, before me personally came Davies Al/AlV to me known, who being by me duly sworn, did depose and say that he resides in Mossport France, that he is the 51-6 of Mainl , the corporation described in and which executed the above instrument; and that he signed his name thereto by authority of
the board of directors of said corporation.
h) elva a Conant
Debra A. Conant Notary Public, State of Maine My Commission Expires October 4, 2021
ACKNOWLEDGMENT OF SURETY
STATE OF NEW YORK)) SS.: COUNTY OF SUFFOLK)
On the 16th day of MARCH in the year 2015, before me personally came
DAVID A. GOLDSTEIN to me known, who, being duly sworn, did depose and say that he
resides at MERRICK, NEW YORK that he the Attorney-In-Fact of
RLI INSURANCE COMPANY
the corporation described in and which executed the above instrument; and that he signed his name thereto by of the board of directors of said corporation
JENNIFER SPADARO Notary Public State of New York No. 01SP5017514 Qualified in Suffolk County Commission Expires Sept. 7



9025 N. Lindbergh Dr. | Peoria, IL 61615 Phone: (800)645-2402 | Fax: (309)689-2036

POWER OF ATTORNEY

RLI Insurance Company Contractors Bonding and Insurance Company

Know All Men by These Presents:

That this Power of Attorney is not valid or in effect unless attached to the bond which it authorizes executed, but may be detached by the approving officer if desired.

That this Power of Attorney may be effective and given to either or both of RLI Insurance Company and Contractors Bonding and Insurance Company, required for the applicable bond.

That RLI Insurance Company and/or Contractors Bonding and Insurance Company, each Illinois corporations (as applicable), each authorized and licensed to do business in all states and the District of Columbia do hereby make, constitute and appoint:

Robert Mastrantonio, Glenn Glubiak, David A. Goldstein, jointly or severe	ally
in the City of, State of, State of, New York conferred upon him/her to sign, execute, acknowledge and deliver for undertakings, and recognizances in an amount not to exceed	, as Attorney in Fact, with full power and authority hereby for and on its behalf as Surety, in general, any and all bonds, Ten Million Dollars
The acknowledgment and execution of such bond by the said Attorney is been executed and acknowledged by the regularly elected officers of this	
RLI Insurance Company and Contractors Bonding and Insurance following is a true and exact copy of the Resolution adopted by the Board	e Company, as applicable, have each further certified that the
"All bonds, policies, undertakings, Powers of Attorney or othe corporate name of the Corporation by the President, Secretary, any such other officers as the Board of Directors may authorize. T Secretary, or the Treasurer may appoint Attorneys in Fact or A undertakings in the name of the Corporation. The corporate se undertakings, Powers of Attorney or other obligations of the Corporate may be printed by facsimile or other electronic image."	y Assistant Secretary, Treasurer, or any Vice President, or by the President, any Vice President, Secretary, any Assistant Agents who shall have authority to issue bonds, policies or eal is not necessary for the validity of any bonds, policies,
IN WITNESS WHEREOF, RLI Insurance Company and/or Contracto caused these presents to be executed by its respective Vice President with	
State of Illinois SS SS SEAL SEAL SEAL STAL STA	RLI Insurance Company Contractors Bonding and Insurance Company Roy C. Die Vice President
On this <u>28th</u> day of <u>January</u> , <u>2015</u> , before me, a Notary Public, personally appeared <u>Roy C. Die</u> , who being by me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of the RLI Insurance Company and/or Contractors Bonding and Insurance Company, and acknowledged said instrument to be the voluntary act and deed of said corporation.	I, the undersigned officer of RLI Insurance Company, and/or Contractors Bonding and Insurance Company, each Illinois corporations, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable; and furthermore, that the Resolution of the Company as set forth in the Power of Attorney, is now in force. In testimony whereof, I have hereunto set my hand and the seal of the RLI Insurance Company and/or Contractors Bonding and Insurance Company this Lettin day of March.
arqueline M. Bocklex	RLI Insurance Company
Jacqueline M. Bockler Notary Public	Contractors Bonding and Insurance Company
"OFFICIAL SEAL" POBLIC STATE OF STATE OF COMMISSION EXPIRES 01/14/18 3124359	Roy C. Die Vice President A005911



RLI Insurance Company P.O. Box 3967 | Peorla II. 61612-3967 Phone: 309-692-1000 | Fax: 309-683-1610

Sworn to before me this 4th day of March, 2014.

Notarial)

Jacqueline M. Bockle

OFFICIAL SEAL*

FISHE JACQUELINE M. BOCKLER

SINCE JACQUELINE M. BOCKLER

RLI Insurance Company

December 31, 2013

Admitted Assets		Liabilities and Surplus	
Investments:		Liabilities:	
Fixed maturities	\$ 565,275,057	Reserve for unpaid losses and loss	
Equity securities	936,244,320	adjustment expenses	\$ 444,285,84
Short-term investments	2,488,289	Unearned premiums	201,229,81
Real estate	22,332,965	Accrued expenses	52,704,39
Properties held to produce income	0	Funds held	5,326,92
Cash on hand and on deposit	27,278,945	Advance premiums	4,990,30
Other invested assets	750,000	Amounts withheld	61,410,39
Receivables for securites	0	Ceded reinsurance premium payable	33,163,47
Agents' balances	108,168,054	Payable for securities	_
nvestment income due and accrued	6,186,935	Statutory penalties	443,20
funds held	4,000	Current federal & foreign Income taxes	2,507,67
Reinsurance recoverable on paid losses	4,352,755	Federal income tax payable	13,100,90
ederal income texes receivable	C	Borrowed maney and accrued interest	1,28
Vet deferred tax asset	0	Orafts outstanding	
Suarantee funds receivable or on deposit	64,220	Payable to affiliate	
Electronic data processing equipment,	- 11 4	Other liabilities	1,052,63
net of depreciation	438,158		
Receivable from affiliates	4,298,475	Total Liabilities	\$ 820,216,66
Other admitted assets	1,555,812		
Nilds Equienda posara		Surplus:	
otal Admitted Assets	\$ 1,679,437,985	Common stock	\$ 10,000,37
GUI AGIIIII GG ASSOIS	4 1,010,101,000	Additional paid-in capital	242,451,08
		Unassigned surplus	606,769,86
State of Illinois		Total Surplus	\$ 859,221,32
County of Peoria		Total Liabilities and Surplus	\$ 1,679,437,98
orporation duly organized, in the State of III NEW YORK and has aid Company and is duly qualified to act as ualified to act as Surety under the Act of	linois, and license s duly complied w s Surety under su ' Congress appro nt is a full, true,	resident of RLI Insurance Company; that said of and engaged in business in the State of	applicable of the applicable o
CORPORATE SEAL	'orporate }	Michael J. Stone	Preside
DEVIL	Affixed)	mlad Cailland)	

Notary Public, State of Illinois



RLI Surety A division of RLI Insurance Company

9025 North Lindbergh Drive | Peoria, IL 61615 P: 212-988-1283 | F: 212-879-2855 | www.rlicorp.com

March 16, 2015

City of Saco 300 Main Street Saco, ME 04072

Re:

Ву

Chesterfield Associates, Inc.

Simpson Road over Stackpole Creek Design-Build Bridge Project, Saco, ME March 23, 2015 Bid

- 1) The Performance Bond shall cover all aspects of the actual construction portion of the contract.
- 2) The Performance Bond does not cover any defect or omission in the design work called for within the contract.
- 3) The Surety shall provide a separate Maintenance Bond to warrant the construction specific elements of the project for a period of 24 months from final acceptance by Owner. Such Maintenance bond will not cover any defects or omission in the design work called for in the contract.

RLI Insurance Company

David A. Goldstein, Attorney-In-Fact

DIFFERENT WORKS

Appendix A Form C

FORM C - PRICE PROPOSAL

Simpson Road over Stackpole Creek

Chesterfield Associates Inc
(Name of Proposer)

The above named Proposer hereby offers to perform and complete all Work specified or indicated in the Contract Documents in conformity with the same for the Price shown below.

LUMP SUM PRICE - BASE BID

Eight Hundred Thirty-nine Thousand Five Hundred Dollars and (Price in words - typed or printed in ink) 300 cents

\$ 839,500.00 (Price in numbers – typed or printed in ink)

LUMP SUM PRICE - BID ALTERNATE # 1

Bid Alternate #1 – This Alternate shall consist of excavating for and constructing a stabilized stone protected drainage ditch alongside Simpson Road up to a distance of 250 feet from the bridge abutments in either direction, and on either side of the roadway. Per linear foot price for this Alternate should include costs of furnishing all materials, labor and other incidentals necessary to satisfactorily construct the Stone Ditch Protection.

Fifty Dollars per lineal foot of ditch as described above (Price in words - typed or printed in ink)

\$ 50.00 per lineal foot of ditch as described above. (Price in numbers - typed or printed in ink)

PER LINEAR FOOT PRICE - BID ALTERNATE # 2

Bid Alternate #2 – This Alternate shall consist of constructing additional length of full depth roadway reconstruction beginning at the bridge abutments and up to 250 linear feet in either direction. The additional length of roadway reconstruction shall use an 11-foot travel lane width with 3-foot gravel shoulders. Per linear foot price for this Alternate should include costs of furnishing all materials, labor and other incidentals necessary to satisfactorily construct this Alternate.

One Hundred Afinety dollars per lineal foot excluding alt !

(Price in words - typed or printed in ink)

\$ 190.00 per lineal foot excluding alf /
(Price in numbers - typed or printed in ink)

Appe	ndix	A
Form	C	

By signing below, the above Proposer hereby certifies that to the best of the Proposer's knowledge and belief:

- 2. All representations and/or certifications required of the Proposer by the RFP and Contract are complete and accurate.
- 3. The Proposer's Price Proposal is complete and accurate and conforms to all applicable requirements of the RFP and Contract.
- 4. The person signing below is legally authorized to do so.

[Any exceptions to the above certifications must be explained in detail on pages attached hereto. Number of pages attached, if any: _____.]

PROPOSER	Dullhis		
Date [Sign in] By:	ink.] E. Davies a	llan, Pres.	



March 23, 2015

City of Saco 300 Main Street Saco. Maine 04072

Subject: Regassi for Proposals

Simpson Road over Stackpole Creek - A Design-Build Bridge Project,

Saco, Maine

To Whom it May Concern:

Chesterfied Associates is pleased to present our response to you request for proposal for the Stackpole Creek Bridge. Our proposal is a hybrid replacement/restoration scheme. We are excited about the possibility to making this proposal a reality for the City of Saco and creating a win-win solution combining the longevity and functionality objectives of the City and the historical and aesthetic objectives of both the City and the surrounding neighborhood.

We are confident that our proposal will be attractive and offer a unique solution for your collective consideration. We look forward to answering your questions and further discussing this much-loved bridge.

> Sincerely, Chesterfield Associates, Inc.

Davies Allan, President

Copy: File

FORM A – TECHNICAL PROPOSAL SUBMISSION FORM Simpson Road over Stackpole Creek

CHESTERFIELD ASSOCIATES, INC. (Name of Proposer)

The above Proposer hereby submits its Technical Proposal, consisting of the following items: (Instructions: Specifically list all items submitted with the Technical Proposal, including number of drawings, number of narrative pages, etc. Attach or incorporate additional pages as necessary. Refer to the Project Requirements for additional instructions regarding Technical Proposal submission.) 1. 11. 13.66 SEE ATTACHED By signing below, the above Proposer hereby certifies states that to the best of the Proposer's knowledge and belief: 1. The Proposer has received and considered complete copies of Amendments numbered 1 through 2. 2. The Design-Builder, Designer, other Major Participants and key personnel indicated by the Proposer in its Statement of Qualifications will be used on this Project in the same manner and to the same extent as so indicated. 3. All of the statements, representations, covenants and/or eertifications statements of belief set forth in the Proposal are complete and accurate as of the date hereof. 4. All representations and/or certifications statements of belief required of the Proposer by the RFP and Contract are complete and accurate. 5. This Technical Proposal is responsive. 6. The person signing below is legally authorized to do so. [Any exceptions to the above certifications statements of belief must be explained in detail on pages attached hereto. Number of pages attached, if any: see attached .] PROPOSER Date [Sign in Ink] [Name and Title Printed]

Technical Proposal

Team Description

Chesterfield Associates is a construction firm specializing in bridge and marine construction, located in Westport Island, Maine. A few years after the inception of Chesterfield Associates, Inc we began taking on projects for the Coast Guard, performing structural repairs on Lighthouses. Off times an upgrade would include the installation of a 90' Loran antennae, requiring substantial concrete and stone work to provide a suitable foundation that would readily resist the overturning forces associated with the design.

Later, the Coast Guard implemented the installation of solar technology, and Chesterfield aptly participated. Over the years Chesterfield has worked on approximately 30 lighthouses.

In 1986 the National Park Service awarded Chesterfield a two million dollar contract to rebuild the Delaware Roebling Aqueduct. The project involved innovative construction techniques which resulted in two engineering awards. (see attached Wikipedia article)

In 1987 the State of New Hampshire entered into a design build contract with Chesterfield to rebuild the Cornish Windsor covered bridge – the longest two span covered bridge in the country - over the Connecticut River. The entire bridge was lifted four feet to allow for the rebuilding of both stone abutments and center pier. The work was completed in 1988 at a total cost of \$4.5 million dollars.

The Cornish Windsor Bridge project resulted in Chesterfield being given numerous engineering awards. (see attached magazine & article).

In 1991 the State of Maine awarded Chesterfield a \$750,000 contract to build a new covered bridge in Dover-Foxcroft. The project involved increasing the height of the granite abutments 4'. The novel part of the construction was the building of the structure a mile off site, and transporting it down a state highway to the final location. (see attached magazine & article).

The rebuilding of the Stackpole Stone Bridge is yet another task that requires innovative strategy and sound construction technique. By teaming up with Mark Gray, P. E., Chesterfield has brought on board a person that eschews this style of ingenuity, resulting in a structure that will absolutely respect its heritage, yet conform with the demands of current traffic parameters. Chris Tanguay, of Maine Dry Stone, complements the team with his broad knowledge of stone structure construction and extensive experience. JAMM Civil and Structural Engineering is a consulting engineering firm with offices in Freeport, Maine. JAMM has been in business for 19 years and has experience with a broad array of engineering projects, including bridges, small dams, road design, and buildings especially as they apply to the disciplines of civil and structural engineering. JAMM has experience with hydraulics, hydrology, bridge design, project construction document preparation and project management.

Chris Tanguay, based in Maine, was certified as a Master Craftsman (Certification No. 163) through the Dry Stone Walling Association of Great Britain in 2005 and completed his Examiner's Certification through the organization in 2006. In 2010 Chris became certified as a Master Craftsman (one of three in the country) through the Dry Stone Conservancy located in Kentucky. Chris has been working with stone for 20 years. His work with stone started as a hobby, but turned into a career after he attended a lecture in college on the art of dry laid stonewalls. When Chris is not working with stone he enjoys promoting the craft through workshops and demonstrations for non-profits in the New England area.

JAMM Civil & Structural Engineering was established in 1996. Practice areas include bridges, structural engineering and design, civil engineering and design, roadway design, small dams and hydraulic/hyrology. Mark Gray, PE, President has been practicing engineering in southern Maine for 40 years.

Project Team

Construction project manager: Davies Allan, President, Chesterfield Associates

Design Engineer:

Mark Gray, P.E. (Maine 3997) (see attached resume)

Stone Mason:

Chris Tanguay

Scope of Services

Chesterfield Associates proposes to provide the following design and construction services.

- 1. Final design and construction plans and specification notes describing the improvements to the bridge and approaches.
- 2. Complete construction services including:
 - a. Removal of loose mortar in existing stone wall faces.
 - b. Stabilizing and securing stone elements in the wall, especially in the areas within and near the entrance and exit of the existing culvert opening.
 - c. Chinking larger openings in the dry-laid stone masonry.
 - d. Removal as practicable frost-susceptible fill materials from within the area bounded by the culvert walls, stone side wall and top surface of roadway. Existing culvert walls and stone arch roof will be supported as required.
 - e. Reinforce the sides and top of the existing stone culvert passing through the dry-laid stone side walls with reinforced concrete walls and roof cast against the exposed inside faces of the culvert walls and top arch. Soil forms will be used on the vertical walls. Bottom of the walls will be dowelled into existing ledge and large side wall stones.

5 3. Cast

ಷನ್ನು

- f. Backfill the same zone with crushed rock and stone graded from course to fine, deep to shallow, ending with an uncompacted crushed stone work platform and form for a reinforced concrete bridge slab spanning between the tops of the existing dry-laid stone side walls.
- g. Construct reinforced concrete abutment walls on both ends of the bridge supported on spread footings on native soil (or ledge if encountered in the excavation).
- h. Construction reinforced concrete structural slab spanning between the two existing dry-laid stone side walls, anchored into the top of the stone wall. Provision will be made to allow the forming materials supporting the slab during construction to settle or degrade over time to allow the slab to act as designed.
- i. Paved, full depth, approach aprons will be constructed to transition the approach vertical and horizontal alignments to the new bridge deck. Limited clearing and installation of rip-rap around abutments on the four corners of the bridge.
- j. Guard rail will be provided on both sides of the new bridge deck and both sides of the approach aprons.
- k. Construction testing for concrete and soil materials will be undertaken

Design Narrative

There are four primary design objectives as listed below.

- 1. Bridge to accommodate H-20 vehicle loading
- 2. Bridge will provide 2 11' travel lanes.
- 3. Bridge will provide improved hydrology through the structure.
- 4. Bridge design will provide a 75 year design life.

H-20 Loading

The proposed design provides H-20 live loading.

Travel Lane Width

The proposed design is a hybrid between a replacement and rehabilitation. We have therefore provided two 12' travel lanes, two 3' wide shoulders and additional width of 2' on each side to accommodate the mounting of deck supported guard rail.

improved Hydraulic Capacity Through Structure

The proposed design will provide improved hydrology through the structure. The improvement will be provided by the removal of the temporary bracing that has been in place since 2001. Analysis of the hydraulic opening using the Q100 data provided by CLD using HydroCAD hydraulic and hydrologic modelling was undertaken with the following results. It should be noted that the project datum is lower than the NAVD88 datum used by FEMA and the Maine GIS library. Based on comparing contours, we believe that the difference is about 1.5 feet; project benchmark is about 1.5 feet lower than FEMA Flood Mapping. For purposes of clarity, we will use the FEMA datum in the following information.

The existing low point in the roadway pavement (overtopping elevation) is about elevation	80.0
Underside of top of arch in culvert	74.0
Spring line of arch (bottom of the arch where the culvert is 8' wide)	70.0
Bottom of 8' width if culvert	55.0
Calculated cross sectional area of the culvert	145 sf

The 100 year storm rains 6.6 inches in 24 hours type III storm Watershed area is 5.1 square miles or 3264 acres

	. Valentina di sali sali sali sali sali sali sali sal					
Case	Q100	Cn	Tc (minutes)	Assumed	Headpool	Comments
	cfs		Elevation	Tailwater	Elevation	
				Elevation		
1	750	57	416.5	64	67.11	Saco River not at Peak
2	750	57	416.5	70	71.49	Saco River at 100 Year Flood Level
3	940	62	416.5	70	72.21	Saco River at 100 Year Flood Level - significant watershed development curve number +5
4	1136	67	416.5	70	73.05	Saco River at 100 Year Flood Level Significant Development Watershed curve number +10

The site is immediately adjacent to the Saco River at the bottom of the Saco River's watershed. Stackpole Creek has a much smaller watershed than the Saco River. For a design storm such as a hurricane which will cover a large enough geographic area to affect both watersheds, the peak discharge in Stackpole Creek will have come and gone before the Saco River peaks to the FEMA 100 Year flood elevation of 70.0. Nevertheless cases 2, 3 and 4 in the above chart show the headpool elevations for the case when Stackpole Creek peaks concurrently with the Saco River, an extremely unlikely event, given the once-every-100 year statistical frequency of the 100 year storm for both watersheds. This case considers a separate 100 year storm affecting the Stackpole Creek watershed concurrent with the peaking of the Saco River from a previous, more regional 100 year storm.

Cases 3 and 4 consider the question of upstream development in the Stackpole Creek watershed. Alternate 3 considers an increase in curve number of 5 and case 4 considers the significant increase in curve number of 10 representing significant increases in peak discharge over time. Detailed analysis of development potential in the Stackpole Creek watershed was not undertaken. However, given the large amount of wooded, undevelopable land in this watershed these cure number increases seem reasonable.

See the attached sketch which graphically shows the headpool elevation of each case along with the upstream flooded area. Also shown is the flooded area which will occur from the Saco River backwater with no storm flow in Stackpole Creek. As can be seen, flooding risk is manageable. Recent anecdotal evidence from neighbors indicate that headpool elevations have been on the order of 76.5 during the

recent Patriots Day storm, likely because of of hydraulic inefficiency through the culvert due to the presence of the current bracing and its magnified tendency to collect water-borne debris which further impedes the hydraulic efficiency of the existing culvert.

We believe that after our proposed restoration and with regular maintenance of the upstream culvert entrance, that hydraulic capacity of the restored culvert will be adequate over the design life of the bridge and culvert. We have provided a graded rip-rap access corridor to allow a small excavator to move down the 2 on 1 slope to access the inlet side of the culvert to remove debris on a periodic basis. The existing 8' wide culvert opening will pass much debris, especially after the temporary bracing is removed.

Design life of the dry-laid stone retaining walls will be 75 years. The current localized movement of areas of the outside and culvert walls is due to freeze-thaw movement of the retained soils due to contamination over the life of the structure with frost susceptible soils. As others have said, live load surcharge forces may have contributed to movement of both culvert side wall and the more massive side walls. Trapped hydraulic pressure from retained headpool elevations may have also contributed to forces causing movement.

This proposal reduces or eliminates all three causes. We propose to remove the retained soils and replace them with free-draining crushed rock. We also propose to remove mortar facing on the lower sections of the wall to facilitate rapid drainage of water from within the structure without loss of finer material due to sediment transport. In addition, surcharge live loads from traffic will be transferred to the outside dry-laid stone retaining structures, eliminating destabilizing later loading to both the culvert and outside walls and replacing it with stabilizing vertical forces on the tops of the side walls. The proposed doweling into the top of the dry-laid stone walls will tie the whole system together with a very stiff horizontal diaphragm with a 1 to 3.3 aspect ratio. The result will allow the entire system to be analyzed for stability as an integrated system. Proposed reinforcing with a soil-formed reinforcing wall on the back sides and top of the existing culvert will stabilize and reinforce that structure.

Concrete deck system is preliminarily sized at 24" thick. The wearing surface will be concrete. As future paving of Simpson Road occurs, the bituminous paving can be extended over the bridge. The concrete deck system will be treated with a sealant to help prevent the intrusion of road salts. We also propose to use epoxy coated steel reinforcing which will extend the design life of the concrete slab system.

FEIL FLAN

1 1 500

Proposal Conditions

الإرهام والمار

Section 1.7 of the RFP contains language that we and our insurers have concern about. Prior to entering into a contract with the City of Saco to design and construct this project, this language will need to be negotiated to our mutual satisfaction.

Professional liability coverage of \$1,000,000 per project, as required by the State of Maine, Bureau of General Services will be provided. Coverage is claims-made and is not "project-specific". Our proposal includes a \$2500 increase to change coverage from \$1,000,000 to \$2,000,000 per project. This seems to be an unnecessary cost to the taxpayers of the City of Saco and will be credited if this provision is relaxed.

Section 5.2 Acknowledgement by the Proposer has statements that we would modify. Paragaph A states that all Owner-supplied information is conceptual in nature. Much of the supplied information consists of engineering evaluations, geotechnical evaluations, engineering opinions and recommendations, topographic and boundary surveys. We have relied on much of this information in the preparation and preliminary design of our proposal.

We assume that each party to an eventual agreement retains their own liability with respect to their obligations and responsibilities under the final contract.

Section 6.0 Project Design We propose to work closely with the City of Saco's Engineering Department and any third-party reviewers to come to a mutually acceptable design approach using prevailing engineering standards reasonable and customary.

In the absence of a defined pavement build-up and ditch design, our assumptions are shown on the attached plans. In the event that more costly designs are required, then appropriate changes in the contract terms will be required.

It is noted that the steel-backed timber guardrail specified is an expensive choice with little improvement in aesthetic appeal from the outside. We have carried the cost of this project requirement. The City may wish to revisit this requirement with resulting savings to the taxpayers.

Design life assumes that a particular design will cease to function or be seriously degraded after the timespan has elapsed. Factors such as maintenance frequency, material degradation, rate of application of salts all have a marked effect on the condition and functionality of infrastructure over time. We believe that our proposal will provide a service life of 75 years with reasonable maintenance and care and meets established standards of design and engineering practice and practicable construction practices and capabilities.

Engineering "certification" language is uninsurable and overstates the responsibility of the engineer. We propose to provide sealed design and construction design documents along with any statements of our belief based on evidence at our disposal.

J. 1884 e.

MARK GRAY

JAMM

Civil and Structural Engineering 20 Independence Drive Suite 3a Freeport, ME 04032

REGISTRATION

Professional Engineer: Maine (1979), New Hampshire 1988 (lapsed), Massachusetts (1988), Rhode Island 1989 (lapsed)

EDUCATION

÷ ,

B. S. Civil Engineering, University of Maine, 1975
All course work for M. S. Structural Engineering, University of New Hampshire, 1980

PROFESSIONAL BACKGROUND

Owner, JAMM, Civil and Structural Engineering, Freeport, Maine January 1996 to Present

General practice of Civil & Structural Engineering including design of structures, site design and civil design.

Vice President, BH2M, Gorham, Maine January 1989 to January 1996

Responsibilities include drainage studies, phosphorus studies, hydraulics, civil design, oversight of all structural engineering activities as well as specifications writing, coastal development, bridge design and support structural design for buildings.

Chief Structural Engineer, Wright-Pierce Engineers, Topsham, Maine October 1987 to January 1989

Responsibilities included quality assurance for all structural engineering, design of hydraulic structures, foundations, bridges, buildings and analysis of structures.

Project Engineer, T. Y. Lin International/Hunter-Ballew Associates, Falmouth, Maine 1975 to 1979; 1984 to 1987

Duties included design of treatment plant structures, bridges, buildings, marine structures, fishways, dam rehabilitation, backflow prevention systems, storm and sanitary sewer systems, urban street and highway design, site design, airport design and general civil design work.

Design Engineer, E. C. Jordan Co., Portland, Maine 1980 to 1981

Structural design of heavy industrial structures.

Engineering Manager, Hussey Seating Co., North Berwick, Maine 1981 to 1984

Duties included management of 25 person production drafting and engineering group along with structural design in aluminum, steel and wood.

Design Engineer, Hunter-Ballew Associates, Portland, Maine 1975 to 1980

THE WHITE HOUSE WASHINGTON

November 9, 1988

time in the

It is a great pleasure to congratulate every recipient of the 1988 Presidential Awards for Design Excellence.

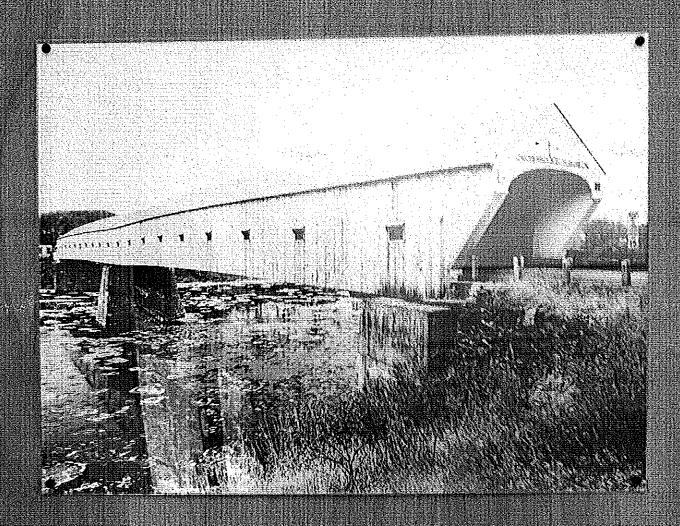
We do well to honor and recognize meritorious examples of Federal design such as yours, because government's success depends on its performance and ability to inspire. Good design reveals our values and the importance we place on these projects, and your example will surely encourage others to emulate them.

In the fields of architecture, interior and industrial design, landscape architecture and environmental planning, and visual communications, the Federal government currently is the largest single user of design services. The public trust requires that we use our resources prudently and well, striving for fine design that combines cost-effectiveness with problem-solving and beauty.

Each of the 10 winning projects in this year's Presidential Design Awards is a model of leadership in these areas. I am happy to commend the devotion of each designer and the foresight of the Federal departments and agency administrators involved. You have set a positive example for both government and the private sector, and the American people are proud and grateful.

God bless you, and God bless America.

Paris Coogui



AWARD OF MERIT

Rehabilitation of an Existing Bridge RESTORATION OF THE CORNISH WINDSOR COVERED BRIDGE

Cornish, New Hampshire: Windson, Vermont

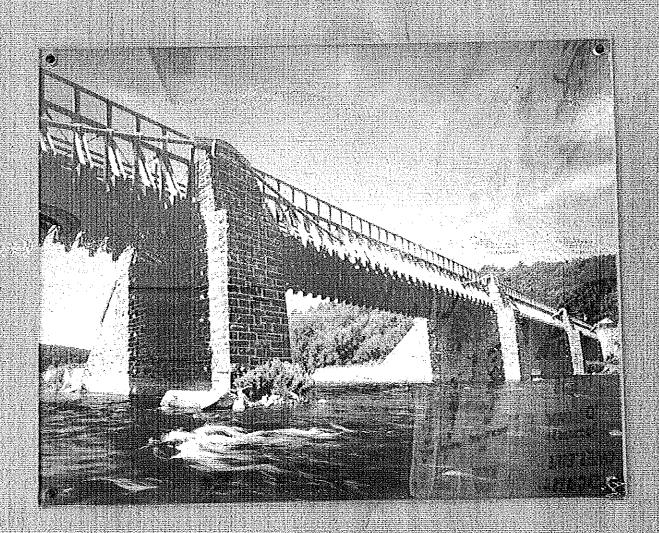
Owner: New Hampshire

Department of Transportation

Designer: DCF Enginecting Inc.

Contractor: Chesterfield Associatios:

1990 ENGINEERED TIMBEK BRIDGE AWARD



AWARD OF MERIT

Rehabilitation of an Existing Bridge
RESTORATION: OF THE ROEBLING BRIDGELI DELAWARE AQUEDUCT

Packawaxen, PAS. Minisink, Ford, N. Y.

Owings Kational Rack Service, Upper Delaware
Scenic Land Recreational River

Designates Ammar & Whitney, Consulting Engineers

Compactors Obesterne du Associates.

1989 Prize Bridge Competition

Award of Merit



Awarded by

American Institute of Steel Construction, Inc

for

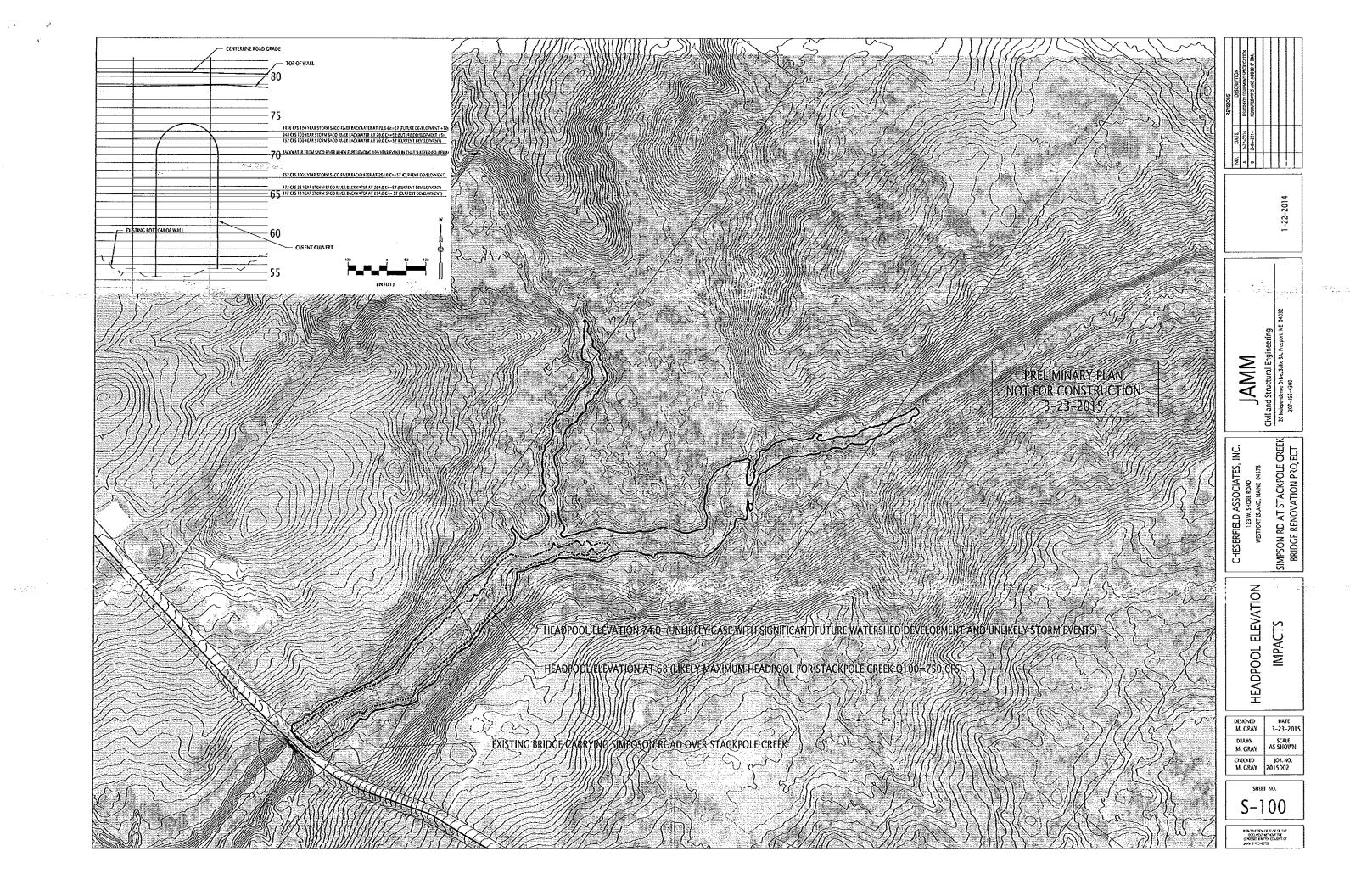
Roebling Delaware Aqueduct Bridge Lackawaxen, PA/Minisink Ford, NX

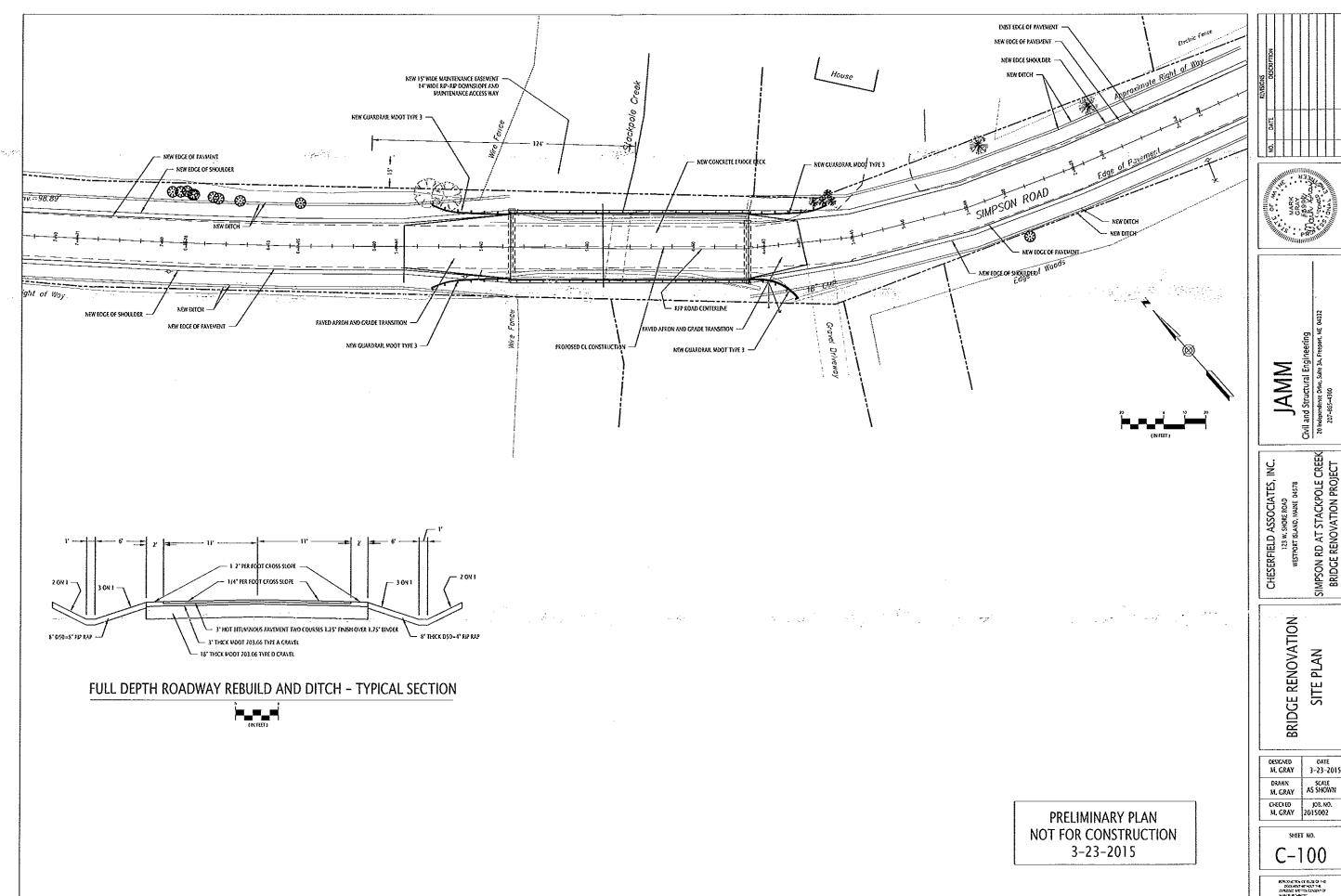
in recognition of outstanding design in structural steel.

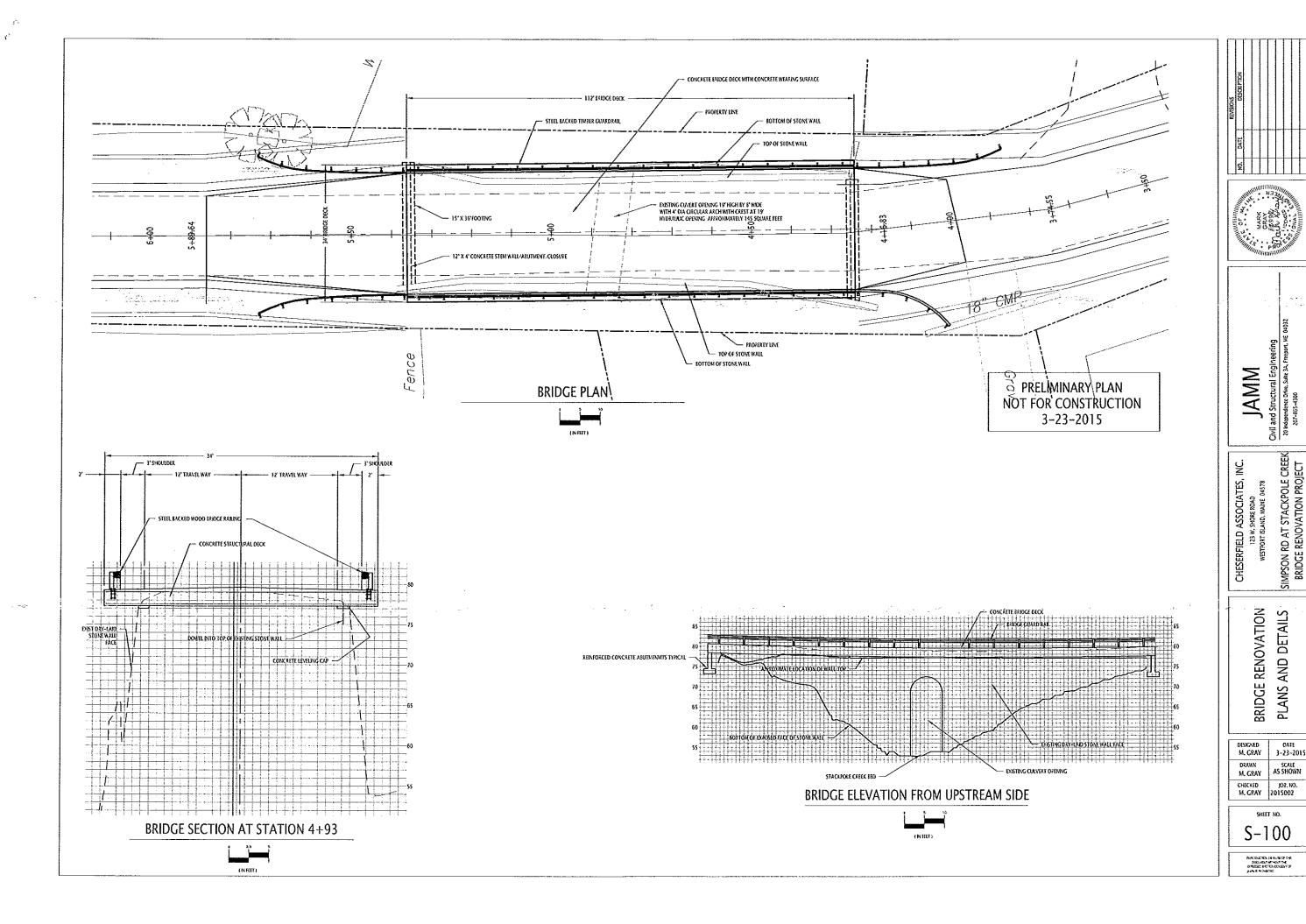
Reconstructed

Chesterfield Associates, Inc.

Seneral Contractor/Fabricator/Erector







Simpson Road at Stackpole Creek Bridge , Saco, Maine -Chesterfield Associates PROPOSED CONSTRUCTION Install Bridge guard rail
Construct Approach Transitions
Install approach guard rails
Demobilize and clean up.

SCHEDULE 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 20-Apr-15
27-Apr-15
4-May-15
11-May-15
18-May-15
25-May-15
25-May-15
25-Jun-15
22-Jun-15
29-Jun-15
29-Jun-15
29-Jun-15
29-Jun-15
29-Jun-15
3-Aug-15
10-Aug-15
17-Aug-15 11-Jan-16 18-Jan-16 25-Jan-16 7-Sep-15 28-Sep-15 5-0ct-15 12-0ct-15 19-Oct-15 26-Oct-15 2-Nov-15 9-Nov-15 16-Nov-15 23-Nov-15 14-Dec-15 21-Dec-15 28-Dec-15 1-Feb-16 8-Feb-16 15-Feb-16 Task Submit Proposal Review and Negotiations Award Contract **Deveop Design Documents** Mobilize to Site Demolition Excavation and Bracing Stone Masonry Repair Culvert reinforcing walls and roof Construct Abutment on south side Begin backfilling with crushed rock Construct abutment on north side Erect precast forms Place deck reinforcing Place concrete deck